



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/826,292 | 04/19/2004 | Yoshihito Itou | Q80956 | 9994 |
| 23373 | 7590 | 09/28/2005 | EXAMINER | |
| SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037 | | | LA, ANH V | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2636 | |

DATE MAILED: 09/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/826,292

Applicant(s)

YOSHIHITO ITOU ET AL

Examiner

Anh V. La

Art Unit

2636

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6,7 and 9 is/are rejected.
- 7) ☒ Claim(s) 2,5 and 8 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>4/19/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

1. Claims 7-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites the limitation "said brush abrasion limit portion" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "said brush abrasion limit portion" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 8 recites the limitation "said brush abrasion limit portion" in line 2. There is insufficient antecedent basis for this limitation in the claim.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 4, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Purdy in view of Maddox.

Regarding claim 1, Purdy discloses a brush abrasion detector of a vehicle generator comprising a bush 10, a slip ring, an end portion of a field winding of a generator, an excitation current from a battery 78 (abstract), an output voltage detection circuit 136, 138-148, for detecting an output voltage value from the generator, and a

brush abrasion determination circuit 124, 126, 128 for determining an abrasion state of the brush based on the output voltage value 20 detected by the output voltage detection circuit (abstract). Purdy does not clearly disclose a current detection circuit. Maddox teaches the use of a current detection circuit (column 4, lines 25-40). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to include a current detection circuit to the detector of Purdy as taught by Maddox for the purpose of detecting a current value flowing through the field winding of the generator via the brush.

Regarding claim 4, Purdy discloses a material having a large contact resistance 26.

Regarding claim 7, Purdy clearly discloses a brush abrasion limit portion possesses such a configuration that a contact area with the slip ring becomes smaller.

4. Claims 3, 6, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Purdy in view of O'Callaghan.

Regarding claim 3, Purdy discloses a brush abrasion detector of a vehicle generator comprising a bush 10, a slip ring, an end portion of a field winding of a generator, an excitation current from a battery 78 (abstract), and a brush abrasion determination circuit 124, 126, 128 for determining an abrasion state of the brush based on a output voltage value 20 detected by an output voltage detection circuit (abstract). Purdy does not clearly disclose a revolution speed detection circuit and the brush abrasion determination circuit for determining the abrasion state of the brush based on

Art Unit: 2636

the number of revolutions detected by the revolution speed detection circuit.

O'Callaghan teaches the use of a revolution speed detection circuit (col. 1, lines 10-25, col. 2, line 15- col. 3, line 20) and the brush abrasion determination circuit for determining the abrasion state of the brush based on the number of revolutions detected by the revolution speed detection circuit (col. 1, lines 10-25, col. 2, line 15- col. 3, line 20). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to include a revolution speed detection circuit and the brush abrasion determination circuit for determining the abrasion state of the brush based on the number of revolutions detected by the revolution speed detection circuit to the detector of Purdy as taught by O'Callaghan for the purpose of detecting a the number of revolution of the generator to effectively determine the abrasion state of the brush.

Regarding claim 6, Purdy discloses a material having a large contact resistance
26.

Regarding claim 9, Purdy clearly discloses a brush abrasion limit portion
possesses such a configuration that a contact area with the slip ring becomes smaller.

5. Claims 2, 5, and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 2636

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Thompson, Baumgartner, and Corkran teach brush wear indicator systems.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh V. La whose telephone number is (571) 272-2970. The examiner can normally be reached on Mon-Fri from 9:30am to 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffery Hofsass can be reached on (571) 272-2981. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



ANH V. LA
PRIMARY EXAMINER

Anh V La
Primary Examiner
Art Unit 2636

AI
September 17, 2005